REPORT

OF THE

CANADIAN ARCTIC EXPEDITION 1913-18

VOLUME IX: ANNELIDS, PARASITIC WORMS, PROTOZOANS, ETC.

PART B: POLYCHAETA

By RALPH V. CHAMBERLIN

SOUTHERN PARTY--1913-16

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OTTAWA
THOMAS MULVEY
PRINTER TO THE KING'S MOST EXCELLENT MAJESTY
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VOLUME IX: ANNELIDS, PARASITIC WORMS, PROTOZOANS, ETC.

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The Polychaetes Collected by the Canadian Arctic Expedition, 1913-18.

By Ralph V. Chamberlin.

Museum of Comparative Zoology, Cambridge, Mass.

Polychaetes were collected by the Canadian Arctic Expedition at various points along the North American Coast from southern Alaska northward and eastward to Bathurst inlet, Northwest Territories, by far the greater amount of material coming from the regions about Granthey harbour (port Clarence) and Collinson point, Alaska, and from Dolphin and Union strait and particularly Bernard harbour, Northwest Territories. Twenty-five species were represented in the material secured east of the mouth of the Mackenzie river and twenty-two from the region west of this point. By far the greater part of the material was taken along shore at small depths. A few forms are pelagic and a few were dredged from a depth of a hundred meters in Dolphin and Union strait. The pelagic forms include several spionid larvæ and one larval *Paranaitis*. The specimens were collected by Mr. F. Johansen on the expedition from 1913 to 1916.

This report covers also some other annelid material from northern regions received for identification from the Canadian Geological Survey, this embracing collections made in Hudson bay and Hudson strait by the *Neptune* and *Diana* expeditions, a few forms from the eastern side of Hudson bay collected by A. P. Low, and several additional forms from British Columbia and Halifax.

As was to be anticipated, the species represented are for the most part well-known and mostly widespread arctic and subarctic forms, the polychæte fauna of the Arctic being one of the longest studied and best known in the world. All the species taken by the Arctic Expedition east of the Mackenzie river were forms previously well known from Greenland and other arctic localities. West of the Mackenzie, where the rich Bering Sea fauna was approached or entered, the collections yielded seven previously undescribed species. In addition a new *Nepthys* is described from material taken by the *Neptune* in Hudson bay and a new *Chone* from that taken by the *Diana* in Hudson strait. Thus the report includes descriptions of nine new species from the total of forty-nine. The following lists indicate the forms secured at the several general localities.

British Columbia.

Halosydna lordii (Baird).
Serpula vermicularis Linné.

Port Clarence, Alaska.

Harmothoe imbricata (Linné).
Arctonoe lia, n. sp.
Paranaitis sp., larvæ.
Psammate aphroditoides (Fabricius).
Spionid, larva.
Cistenides granulata (Linné).

Collinson Point, Alaska.

Antinoe sarsi Kinberg.
Ephesiella minuta (Webster and Benedict).
Spio mimus, n. sp.
Scolecolepides arctius, n. sp.
Anaspio boreus, n. sp.
Terebellides stroemi Sars.
Ampharete johansent, n. sp.
Ampharete reducta, n. sp.

Other Alaskan Localities (mostly south of point Barrow)

Aphrodite sp. (Beaufort Sea, Sta. 29*f*.)
Autolytus prismaticus (Fabricius). (Sta. 6, 14, 17, 21, 57*a*.)
Autolytus alexandri (Malmgren). (Sta. 17).
Spionid, larva Bb. (Martin point, Sta. 32*c*).
Terebellides stroemi Sars. (Sta 23).
Samytha sexcirrata (Sars). (Sta. 23).
Ampharete eupalea, n. sp. (Sta. 23).
Circeis spirillum (Linné) (Prince William sound, Sta. 60*a*).

DOLPHIN AND UNION STRAIT, NORTHWEST TERRITORIES.

Harmothoe imbricata (Linné).
Gattyana cirrhosa (Pallas).
Nepthys ciliata (Müller).
Autolytus prismaticus (Fabricius).
Onuphis conchylega Sars.
Lumbrinereis sp.
Spionid, larva Ba.
Flabelligera affinis (Sars).
Cistenides granulata (Linné).
Spirorbis spirorbis (Linné).
Circeis spirillum (Linné).

BERNARD HARBOUR, NORTHWEST TERRITORIES.

Harmothoe imbricata (Linné).
Pholoe minuta (Fabricius).
Evarnella impar (Johnston).
Antinoe sarsi Kinberg.
Gattyana cirrhosa (Pallas).
Anaitides groenlandica (Oersted).
Eteone longa (Fabricius).
Psammate aphroditoides (Fabricius).
Nereis pelagica Linné.
Cirratulus cirratus (O. F. Müller).
Arenicola marina (Linné).
Flabelligera affinis (Sars).
Brada villosa (Rathke).
Nicolea venustula (Montagu).
Cistenides granulata (Linné).
Capitella capitata (Fabricius).
Euchone analis (Kröyer).
Spirorbis spirorbis (Linné).
Circeis spirillum (Linné).

BATHURST INLET, NORTHWEST TERRITORIES.

Travisia forbesii Johnston.

MELVILLE ISLAND, NORTHWEST TERRITORIES.

Anaitides groenlandica (Oersted).

HUDSON BAY.

Harmothoe imbricata (Linné).
Nepthys hudsonica, n. sp.
Nereis pelagica (Linné).
Lumbrinereis fragilis (O. F. Müller).
Cistenides granulata (Linné).

HUDSON STRAIT.

Harmothoe imbricata (Linné).
Lagisca rarispina (Sars).
Nereis pelagica Linné.
Paraxiothea catenata (Malmgren).
Amphitrite cirrata (Müller).
Thelepus cincinnatus (Fabricius).
Chone ungavana, n. sp.
Circeis spirillum (Linné).

HALIFAX, NOVA SCOTIA.

Spirorbis spirorbis (Linné).

POLYNOIDAE.

Harmothoe imbricata (Linné).

1766. *Aphrodita imbricata* LINNÉ, Syst. Nat., ed. 12, vol. 1, p. 1084.
1768. *Aphrodita violacea* STROEM, Kongl. Norsk. Vidensk. Selsk. Skrifter, Deel 4, p. 366.
1776. *Aphrodita cirrata* O. F. MÜLLER, Prodr. Zool. Dan., p. 218.
——. *Aphrodita lepidota* O. F. MÜLLER, ibid., p. 218.
1822. *Polynoe cirrata* SAVIGNY, Syst. Annel., p. 26.
1828. *Eumolpe cirrata* BLAINVILLE, Dict. Sci. Nat., 57, p. 459.
1843. *Lepidonotus cirratus* OERSTED, Groenl. Ann. Dorsibr., p. 14, f. 1, 5, 6, II, 14, 15.
1853. *Aphrodita varians* DALYELL, Pow. Creat., 2, p. 168, pl. 24, f. 11, 12.
1865. *Lepidonotus cirrosus* QUATREFAGES, Syst. Annel., p. 261.
1865. *Harmothoe imbricata* MALMGREN, Öfvers. af K. Vet.-Akad. Förh., no. 1, p. 66, pl. 9, f. 8A–8E.

Numerous examples of this widespread species occur in the collection of the Canadian Arctic Expedition. The species is common in the Atlantic on the North American shore from the Arctic regions south to Cape Cod, and on the European

shore to southern England. In the Pacific it ranges south to San Diego on the American coast, and to Japan on the Asiatic. It is well known from the shores of Greenland, Davis strait, etc., and the present collection extends its known distribution along the northern Canadian shores to Alaska.

LOCALITIES.—Alaska: Grantley harbour: Teller. Stations 20*b-c*. July 30, 1913. Many specimens taken at a depth of 2–3 fathoms.

Alaska: Port Clarence bay. Station 20*g*. August 4, 1913. Numerous mostly large, specimens taken at a depth of 2–3 fathoms on a muddy bottom among "thread algæ."

Dolphin and Union strait. Station 43*c*. September 14, 1915. Several specimens taken at a depth of 20–30 meters on a bottom of gray mud with stones and algæ.

Northwest Territories: Bernard harbour, outer part. Station 41. July 20, 1915. Numerous specimens taken at a depth of 10 meters on a muddy bottom among *Laminaria*.

Northwest Territories: Bernard harbour. Station 37*b*. August 25, 1914. Several specimens taken at from 2 to 3 fathoms on a rocky and sandy bottom among *Laminaria*, etc.

Northwest Territories: Bernard harbour. Station 37*e*. September 1, 1914. Many specimens taken at from 1 to 3 fathoms on a sandy bottom among algæ.

Northwest Territories: Bernard harbour. Station 41*b*. July 24, 1915. Several specimens taken at a depth of about 5 meters.

Northwest Territories: Bernard harbour, outer part. Station 41*f*. August 1, 1915. Three specimens taken at 5 meters.

Northwest Territories: Hudson bay, west side: Fullerton. *Neptune* Expedition. A. Halkett, collector, September 19, 1904.

Davis strait: Ungava: Port Burwell. *Neptune* Expedition. A. Halkett, collector, 1903–04. One small specimen lacking elytra.

Lagisca rarispina (Sars).

1860. *Polynoe rarispina* SARS, Forh. Vid. Selsk. Christiania, p. 60.
1865. *Lagisca rarispina* MALMGREN, Öfvers. af K. Vet. Akad. Förh., p. 65.

Eight specimens conforming to this species are in the collection from Hudson strait. Unfortunately they have lost all their elytra. The largest specimen is 46 mm. long. This species is common along the shores of Greenland and also occurs about Iceland, Spitzbergen, Norway and southward into the North sea, Finmark, Nova Zembla, and the Kara sea.

LOCALITY.—Hudson strait: Ungava: Port Burwell. *Neptune* Expedition, 1903–04. A. Halkett, collector.

Pholoe minuta (Fabricius).

1780. *Aphrodita minuta* FABRICIUS, Fauna Groenl., p. 314.
1822. *Polynoe minuta* SAVIGNY, Syst. Annel., p. 26.
1828. *Palmyra ocellata* JOHNSTON, Zool. Journ., 3. p. 329.
1839. *Pholoe inonata* JOHNSTON, Ann. Nat. Hist., 2, p. 437, pl. 23, f. 1–5.
1843. *Pholoe minuta* OERSTED, Groenl. Annul. Dorsibr., p. 169, pl. I, f. 3, 4, 8, 9, 16.
——. *Pholoe baltica* OERSTED, Annel. Dan. Consp., p. 14, f. 21, 34–36, 40.
1844. *Pholoe assimilis* OERSTED, Kröyer Nat. Tidsskr., Anden Raekke, I, p. 404.
1896. *Pholoe eximia* MICHAELSEN, Polychaet. Fauna, p. 12, pl. I, f. 2.

LOCALITY.—Northwest Territories: Bernard harbour: inner harbour. Station 37*e*. September 1, 1914. Two fragments together composing a complete individual taken in a sandy bottom among algæ.

Northwest Territories: Bernard harbour. Station 41*c*. July 28, 1915. Two pieces of a larger individual taken at 3–8 fathoms on a bottom of sandy mud with algæ.

Arctonoe, n. gen.

Body of moderate length, tapering caudad. Number of segments moderate.

Prostomium bearing three tentacles which are inserted marginally. Ceratophores distinct, the styles short and thick, each more or less enlarged proximad of the slender terminal filament. Palpi long, with a slender terminal filament. Two pairs of eyes, these typically on posterior half of prostomium.

Parapodia biramous, but with the notopodia much reduced. Notocirri with cirrophores large, the styles moderate, with terminal filaments. Neurocirri excepting the first, very small.

Both notopodial and neuropodial setæ present, both simple. Notopodials shorter, setose or scaled, distally notched or bidentate. Neuropodials of first postperistomial segment slender, distally bidentate, scaled. The neuropodials of succeeding segments, excepting sometimes one group of those on second parapodia, coarser, with curved hastate heads and simple tips which are not prolonged, more weakly scaled or serrulate.

Elytra present on somites II, IV, V, VII, IX, etc., as in *Halosydna*, with typically near thirty-five pairs present.

Genotype.—*A. lia*, n. sp.

This genus is nearest to *Halosydna*, of which H. *patagonica* Kinberg (= *H. brevisetosa* Kinberg) may be regarded as the type. It is separated from this genus primarily because of the difference in the notopodial setæ, which are distally incised or bidentate, and in the neuropodials of the first parapodia, which are distally bidentate, instead of both neuropodials and notopodials of these parapodia being prolonged into fine, hair-like, entire tips. *Arctonoe* includes also a second Pacific form, *S. fragilis* (Baird), which is closely related to the genotype.

Arctonoe lia, n. sp.

Type specimen.—Catalogue No. 26, Victoria Memorial Museum, Ottawa. Paratypes, Victoria Memorial Museum, No.'s 27, 28; Museum Comparative Zoology, No.'s 2190 and 2191. Five specimens.

General colour of the body pale yellow. The elytra in general practically colourless, or slightly whitish, and translucent to transparent, or nearly so.

The body is of moderate length. It is widest over about the second fourth of its length in front of which it narrows a little and back of which it narrows continuously and decidedly. The type is 25 mm. long, with a maximum width, to ends of setæ, of 4·5 mm. The number of segments appears to be typically between 55 and 60, though none of the types is entirely complete at the caudal end, the maximum number actually present being 56.

The prostomium continues into the ceratophores of the lateral tentacles anteriorly, though rising back of the base of each of these in a rounded elevation, the ceratophores often rather abruptly set off; with a median notch anteriorly in which the median tentacle is inserted. All tentacles short and proportionately thick, with terminal filaments as shown in Pl. I, fig. 1. The palpi are much longer than the tentacles, subcylindrical, distally abruptly narrowed into a terminal filament. Two pairs of eyes are present on the posterior half of the prostomium of which those of the anterior pair are slightly the larger and are much more widely separated. The posterior eyes are more strictly dorsal in position and are near the caudal border.

The tentacular cirri, i.e., the cirri of the peristomial parapodia, are attached at the level of the base of the ceratophores of the lateral tentacles. They exceed the tentacles, which they resemble in form, in length, and the ventral on each side is shorter than the dorsal.

The metastomial segments are moderately convex above and a little less so ventrally, with a distinct neural furrow. Intersegmental furrows distinct. Most segments divided above by a more or less distinct transverse sulcus.

The parapodia are rather short and subcylindrical, but a little compressed anteroposteriorly. The neuropodia rise somewhat at the distal end above and show the usual subvertical setigerous groove across the end and above. The notopodia are small elevations arising from the dorsum of the parapodia toward the anterior side and distad of a cylindrical, finger-like process into which the aciculum extends and the cirrophore. The notocirri are attached at the bases of the parapodia above. The notocirrophore is large, a little narrowed distad, and much exceeding the style in thickness. The latter is of moderate length, expands toward distal end, and terminates in a slender, abruptly set-off filament. Mesad of each cirrophore on the cirriferous segments is a subconical process in line with the elytrophores than which it is smaller. The neurocirri in general arise ventrally proximad of the middle, the position in the posterior region becoming more toward the caudal side. The cirrophores are proportionately very thick and distally truncate. The styles in general are abruptly narrower, short, and very thickly subfusiform or ovoid, with abruptly thinner, filiform tips short. (See Pl. I, fig. 2). The neurocirri of the first normal parapodia, however, are much longer, attaining or exceeding the end of the parapodia proper, and clavate in form proximad of the tip, being closely similar to the notocirri.

The notopodial setæ are present, though reduced to very few in going caudad. They are numerous on the first parapodia, on the second are fewer while on those of the posterior region they are reduced to only one or two or none. They are much shorter than the neuropodials. They are flat and curved, sword-shaped, incised or bidentate at the tip, and scaled along one side. (Pl. II, fig. 1.) The neuropodial setæ, excepting those of the first parapodia, and sometimes in part of one or a few following, distally with moderately hastate heads which are curved. (Pl. 2, fig. 3.) The neuropodial setæ of the first parapodia are all bidentate at the tip and finely scaled along the convex edge of the head. (Pl. II, fig. 2.) In the second parapodia the supraacicular group of setæ remain of this same character, though coarser and longer, while the subaciculars are still coarser, with heads more strongly curved, the tips entire, and the edges smooth excepting for a few weak serrations. (See Pl. II, fig. 3.) Farther caudad both supraaciculars and subaciculars have the latter, essentially smooth, form with entire tips. The notopodials in the first parapodia are not thinner, though shorter, than the neuropodials but they are finer than the ordinary neuropodials farther caudad.

The elytra thin though moderately tough. They are subcircular in outline and are attached midway between their centres and their ectal edges. Surface smooth, appearing wholly to lack tubercles and cilia. (Pl. I, figs. 3, 4.) While they overlap in the series along each side, those of the opposite sides do not overlap mesally, thus leaving a middorsal naked stripe. They occur upon somites II, IV, V, VII, IX, and similarly on alternate somites to XXIII; then on somites XXVI, XXVIII, XXIX, XXXI, XXXIII, XXXV, etc., about twenty-five or more pairs being present.

Localities.—Alaska: Grantley harbour: Teller. Station 20*b-c*. July 30, 1913. Depth, 2-3 fathoms. Bottom, sandy.

Alaska: Port Clarence bay. Station 20*g*. August 4, 1913. Same depth, etc.

This species much resembles *S. fragilis* (Baird), a form common on the Pacific coast farther south. It is a rather more slender form with coarser setæ. The notopodials in general are much more numerous. The species may be distinguished at once by the setæ of the second parapodia, *fragilis* lacking the special supraacicular group of apically bidentat neuropodials present in *lia*.

Evarnella impar (Johnston).

1839. *Polynoe impar* Johnston, Ann. Nat. Hist., 2, p. 436, pl. 22, f. 3–9.
1840. *Lepidonotus impar* Oersted, Annul. Dan. Consp., p. 13.
——. *Lepidonotus impar* Grube, Fam. Annel., p. 36.

1865. *Evarne impar* Malmgren, Öfvers. af K. Vet. Akad. Förh., p. 71, pl. 9, f. 7A–7D.
1888. *Harmothoe impar* St. Joseph, Ann. Sci. Nat., ser. 7, 5, p. 162.
1896. *Harmothoe impar*, var. *Pagenstecheri* Michaelsen, Polychæt. Fauna, p. 7, pl. I, f. I.
1919. *Evarnella*, nom. nov. pro *Evarne* (nom. preocc.), Chamberlin, Mem. Mus. Comp. Zool., 48, p. 40.

Two specimens seeming fully to agree with this species so far as may be judged in the absence of elytra, all of which are lost. The larger specimen is 21 mm. long, with a width across setæ of 7·2 mm. Proboscis 5·8 mm. long.

Locality.—Northwest Territories: Bernard harbour, outer part. Station 41. July 20, 1915. Depth, about 10 metres. Bottom, mud with *Laminaria* and *Delessaria*.

Antinoe sarsi Kinberg.

1865. *Antinoe sarsi* Kinberg, Malmgren, Öfvers. af K. Vet. Akad. Förh., p. 79, pl. 9, f. 6A–6E.
1879. *Polynoe sarsi* Theel, Annul. Nov. Zembla, p. 16.
1912. *Harmothoe sarsi* Ditlevsen, Annul. Danmark Exped., p. 415.

This is another species common in arctic and northern waters of both hemispheres. It is abundant on the Siberian coast, in Bering sea and along Kamchatka, as well as on the European and North American coasts. It has been taken at several points along the coast of Greenland where nearly all the captures have been of single individuals. The Canadian Arctic Expedition took two specimens at each of the two first of the following stations and one at the third.

Localities.—Northwest Territories: Bernard harbour. Station 41. July 20, 1915. Depth, about 10 metres.

Northwest Territories: Bernard harbour, outer part. Station 41*c*. July 28, 1915. Depth, about 5 fathoms.

Alaska: off Collinson point. Station 27*e*. September 17, 1913.

At the last-named station was taken one specimen noted in the field journal as "pelagic under ice at one foot water." It is further noted by Mr. Johansen that "The Polynoid came up with the water as the hole was cut in the ice. It swam quickly along by moving its parapodia successively (as a myriopod), but not (or only to a small degree) by wriggling its body as pelagic chætopods generally do." The specimen is somewhat aberrant in structure from the ordinary non-pelagic form.

Gattyana cirrhosa (Pallas).

1766. *Aphrodita cirrhosa* Pallas, Miscell. Zool., p. 95, pl. 8, f. 3–6.
1780. *Aphrodita scabra* Fabricius, Fauna Groenl., p. 311.
——. *Aphrodita punctata* Fabricius, ibid., p. 311.
1815. *Aphrodita viridis* Montagu, Trans. Linn. Soc., II, p. 18, pl. 4, f. I.
1826. *Eumolpe scabra* Blainville, Dict. Sci. Nat., 57, p. 459.
1834. *Polynoe scabra* Audouin and Milne Edwards, Annel., p. 87.
1839. *Polynoe viridis* Johnston, Ann. Nat. Hist., 2, p. 437.
1843. *Lepidonotus assimilis* Oersted, An[illegible] Dan. Consp., p. 13, f. 3, 6, 14, 32, 33, 37, 38, 45, 46.
1858. *Harmothoe scabra* Kinberg, Annul. [illegible]gen. Resa, p. 21.
1861. *Polynoe scabriuscula* Sars, Forh. Vid. Selsk., p. 61.
1864. *Ledidonotus cirratus* var. *parasiticus* Baird, Trans. Linn. Soc., p. 161.
1865. *Lepidonotus imbricatus* Johnston, Cat. British Annel., p. 118.
1865. *Nychia cirrosa* Malmgren, Öfvers. af Vet. Akad. Förh., p. 58, pl. 8, f. I–IE.
1886. *Iphione muricata* Gibson, Verm. Liverpool, p. 150.
1890. *Nychia cirrosa*, var. *Chætopteri* Malmgren, Ann. Boulon., 15, pl. I, f. 7e–7d.
1897. *Gattyana cirrosa* McIntosh, Ann. Nat. Hist., ser. 6, 20, p. 167.

This northern form is exceedingly common in the fjords of Greenland and is known also from Davis strait. From this region it ranges along the American coast to the gulf of St. Lawrence, to the northern European shores and southward to Ireland. It has been dredged in the Atlantic at a depth of 580–630 fathoms (*Porcupine*). The collections of the Canadian Arctic Expedition extends the range westward to Bernard harbour and other points on Dolphin and Union strait.

LOCALITIES.—Northwest Territories: Bernard harbour. Station 37*l*. October 19, 1914. Several specimens taken at a depth of about one fathom on a bottom of sandy mud among algæ.

Northwest Territories: Dolphin and Union strait: west of Cockburn point. Station 43*c*. September 14, 1915. Several specimens from a depth of 20–30 metres on a bottom of grey mud with stones and algæ.

Halosydna lordii (Baird).

1863. *Lepidonotus lordii* BAIRD, Proc. Zool. Soc. Lond., 1863, p. 107.
1865. *Halosydna lordii*, Journ. Linn. Soc. Lond. Zool., 8, p. 190.
1897. *Polynoe lordi* JOHNSON, Proc. Cal. Acad. Sci., ser. 3, Zool., i, p. 175, f. 35, 44, 51.

LOCALITY. British Columbia: Queen Charlotte islands. One specimen.

The specimen has the characteristic cross-markings of dark pigment with the broader solid band across somite VIII. It is a common form on the western North American coast from San Diego northward to Alaska but is less common in the more southern part of this range.

APHRODITIDAE.

Aphrodita sp.

Two fragments of an *Aphrodita* taken from the stomach of a *Phoca hispida* Schreber are not in condition to permit specific identification. The *Phoca* was taken April 4, 1914, off the coast of Yukon Territory at Station 29*f*. (latitude 70° 13′ N., longitude 140° 50′ W.) Water depth about 30 fathoms.

NEPTHYDIDAE.

Nepthys ciliata (Muller).

1789. *Nereis ciliata* O. F. MÜLLER, Zool. Danica, 3, p. 14.
1843. *Nepthys ciliata* RATHKE, Beitr. Fauna Norweg., p. 171.
—— *Nepthys borealis* OERSTED, Annul. Dan. Consp., p. 32.
——. *Nepthys caeca* (ex. part.), OERSTED, Groen. Annul. Dorsibr., p. 194.
1865. *Diplobranchus ciliatus* QUATREFAGES, Hist. Annel., I, p. 434.

Two fragments of this species are in the collection. This is a species of circumpolar distribution, having been previously recorded from Spitzbergen, Nova Zembla, Kara sea, Siberia, Alaska, Prince of Wales island, Davis strait, Greenland, Iceland, Faroe islands, and southward in the Atlantic to the United States and France.

LOCALITY.—Northwest Territories: Dolphin and Union strait: off Cockburn point. Station 43*a*. September 13, 1915. Depth, about 100 metres. Bottom, mud with pebbles, no algæ. Two fragments, an anterior and a posterior, perhaps parts of the same individual.

Nepthys hudsonia n. sp.

Type specimen.—Cat. No. 51, Victoria Memorial Museum, Ottawa. Paratype, Mus. Comp. Zool. Two specimens.

The general colour of the type is light brown of a weakly pinkish tinge. There is a distinct median longitudinal dark line along the dorsum, the ventral neural line being also somewhat darker. The paratype is darker, particularly so in spots proximad of some parapodia above and on part of the presetal lobes.

The type is composed of eighty-six somites. It has a total length of 69 mm., exclusive of the proboscis which is only partially protruded. The maximum width is 5 mm., this being at the anterior end near the eighth somite, this end of the body being relatively broader, much less narrowed cephalad, than, e.g., in *N. caeca*. From this widest region the body narrows at first more rapidly and then very gradually to the caudal end.

The prostomium is somewhat trapeziform with middle of the narrower caudal end somewhat angularly produced, the form thus somewhat subpentagonal; anterior margin broad, gently convex. Anterior region not protruding forwards as it does in *caeca* and *ciliata*. Posterior tentacles attached on each side at ectal end of anterior margin but little farther caudad than the corresponding anterior tentacle. Tentacles proportionately short and thick, much less slender than in *ciliata*, the posterior or outer ones stouter and a little longer than the inner ones (Pl. II, fig. 4.) On each side at caudolateral angle is a prominent sensory papilla. The mouth appears not to be bordered by such fleshy lateral lips with papillæ as are so prominent in *caeca*, etc. The broadly triangular membrane appearing at the caudal edge of the mouth like a lower lip shows transverse sulci or folds in place of the usual longitudinal ones.

The first setigerous somite is incomplete, being evident only on each side of the prostomium, from which it extends to the border of the mouth on each side, being thus incomplete both dorsally and ventrally. It bears only the notopodia as usual. The second somite, bearing also only notopodia, is complete above though the caudal angle of the prostomium extends into it and nearly bisects it. In the succeeding somites the parapodia are biramous. (See Pl. II, fig. 4.)

The notopodia of the second somite are farther dorsad than those of the first and than those of the third, those of the succeeding somites descending to the sixth or seventh after which they remain at the same level. The first two pairs of notopodia have the same general structure as the succeeding ones, though slender and with the branchial appendages shorter and more conical, these being the so-called tentacular cirri of Ehlers. In a typical parapodium the postsetal lamella of the notopodium is a low convex lobe highest subvertically and decreasing and disappearing distad in strong contrast with the prominent lobe of *caeca* and lower than usual in *ciliata*, ordinarily not exceeding the summit of the lobe. The branchial appendage is long and ordinarily curved in a semicircle with its concavity ectad or dorsad. The cirrus, arising from the base of the branchial appendage, is slender and subulate. The neuropodium is broad, widening distad and with the distal end long, gently convex and mesally incised like that of the notopodium. Postsetal lamella low, short, scarcely exceeding the apex of the lobe. (See Pl. II, fig. 5, 6.)

The aciculæ are dark. The tip of each extends into a projecting conical papilla as usual. The setæ have the usual general arrangement. The coarse posterior setæ are dark, while the fine, camerated anterior setæ are pale. (See Pl. II, fig. 5).

The anus is terminal. From its thickened ventral edge arises a median tapering cirrus of moderate length which reaches only to the penult setigerous segment.

The proboscis as extended in the paratype is 3·6 mm. long and widens from base to beyond middle where it is 3·4 mm. wide. Bearing twenty-two

longitudinal rows of papillæ as in members of the *ciliata* group, with a similar long dorsal papilla.

LOCALITY. Hudson bay: east side, Richmond gulf. June, 1899. Depth, 15 to 25 fathoms. Two specimens. A. P. Low, collector.

This species resembles *ciliata* in the general form of the parapodia and shortness of its setæ; but it is conspicuously different in the form and relations of the prostomium. In *ciliata* this is more quadrate, with the anterior region projecting farther forward obviously beyond the edge of the first segment with anterolateral corners subrectangular, and the posterior tentacles borne decidedly farther caudad on the nearly longitudinal free lateral edges instead of being at essentially the same level with the anterior pair as they are in the species above described.

PHYLLODOCIDAE.

Anaitides groenlandica (Oersted).

1842. *Phyllodoce groenlandica* OERSTED, Nat. Tidsskr., 4, p. 121.
1867. *Phyllodoce badia* MALMGREN, Annul. Polychæt., p. 22.
1867. *Phyllodoce lütkeni* MALMGREN, ibid., p. 24.
1882. *Phyllodoce arctica* HANSEN, Norske Nordh. Exped., 3, pt. 7, Zool., p. 31.
. *Anaitides groenlandica* Czerniawsky, Bull. Soc. Imper. Nat. Moscou, 57, p. 158.

This is a well-known northern form of apparently circumpolar distribution common on the shores of Greenland, Nova Zembla and Spitzbergen and less common on the shores of Finmark, Norway and Sweden and southward to Ireland and the gulf of St. Lawrence. It has also been recorded from Siberia, Bering strait, and Bering sea.

LOCALITIES. Northwest Territories: Bernard harbour, outer part. Station 41*f*. August 1, 1915. One specimen taken at a depth of 2 3 fathoms on a bottom of sandy mud with stones and algæ.

Winter harbour Melville island, May 5, 1909. F. Hennessey. One fully developed specimen, taken in 7·5 fathoms of water. *Arctic* Expedition.

Eteone longa (Fabricius).

1780. *Nereis longa* FABRICIUS, Fauna Groenl., p. 300; Naturh. Selsk. Skr., 5 I, p. 171, pl. 4, f. 11–13.
1843. *Eteone longa* OERSTED, Groenl. Annul. Dorsibr., p. 33, f. 20. 28.

Three specimens of *Eteone* agree well with examples of *E. longa* from Greenland, the type locality, in the Museum of Comparative Zoology at Cambridge, Mass. The specimens are dark and the largest has a length of 52 mm. The species has not been previously recorded excepting from the shores of Greenland, where it seems to be common. The closely related *E. arctica* Malmgren, which may possibly have been confused to some extent with the present species, has an apparently circumpolar distribution, having been listed from Davis strait, Spitzbergen, Finmark, Great Britain, Siberia, and Bering strait.

LOCALITY.—Northwest Territories: Bernard harbour, outer part. Station 41. July 20, 1915. Depth, 3–5 fathoms. Sandy mud with algæ.

Paranaitis sp. Larva.

A number of larvæ of the species of this genus were secured in plankton along with spionid larvæ and numerous crustacea. They are in stages possessing from 13 to 20 setigerous segments. The fused first two segments in all form dorsally a conspicuous collar-like swelling. It is quite possible that these larvæ pertain to *P. wahlbergi* (Malmgren) which has been recorded from Bering sea by Wirén[1] and is a common and widespread form.

[1]Chaet., Vega-Exped., Vetensk. Iakttag., 1883, 2, p. 401.

LOCALITY.—Alaska: Grantley harbour. Station 20*m*, July 30, 1913. Surface.

SYLLIDAE.

Autolytus prismaticus (Fabricius).

1780. *Nereis prismatica* FABRICIUS, Fauna Groenl., p. 302.
. *Nereis bifrons* FABRICIUS, Ibid., p. 303 (Female).
1874. *Proceraea gracilis* VERRILL, Amer. Journ. Sci., p. 132, pl. 5, f. 1.
1883. ?*Autolytus alexandri* LEVINSEN, Vid. Meddel. Nat. Forh. 1882, p. 247. pl. 7, f. 10.
1843. *Polybostrichus longisetosus* OERSTED, Groenl. Annul. Dorsibr., p. 182.
1867. *Autolytus incertus* MALMGREN, Annul. Polychæt., 1867, p. 35, pl. 6, f. 40-40E.

Both sexes of the pelagic stage are represented in the collection, the males by many specimens. A female taken at cape Smyth, Alaska, bears a large brood-sac which has broken open, allowing most of the eggs to escape.

This is a characteristically arctic species previously known from about Greenland, the type-locality, the North American Atlantic coast as far southward as Maine (Casco bay, Eastport), and Spitzbergen. The present records carry the known range in the Arctic westward to Alaska and Bering sea.

LOCALITIES (all in surface).). Off Alaska: Station 14 (latitude 54° 23′ N., longitude 164° 45′ W.) July 2, 1913. One small pelagic male.

Bering sea, off Alaska. Station 17*a* and 17*b*, *c*. (latitude 60° 9′ N., longitude 167° 38′ W.) July 6, 1913. About twenty-five pelagic males.

Off Alaska, Station 6*b*. (latitude 56° 26′ N., longitude 133° 0′ W.)

Alaska: Cape Smyth, Station 57*a*. August 8, 1916. One pelagic female (*Sacconereis*) and one male (*Polybostrichus*).

Alaska. Station 21*d*, *e*, *f*. (latitude 68° 48′ N., longitude 165° 10′ W.) August 16, 1913. Six pelagic males.

Northwest Territories: Off Young point in Dolphin and Union strait. Station 50*b*. July 17, 1916. One large pelagic male.

Autolytus alexandri Malmgren.

1867. *Autolytus alexandri* MALMGREN, Annul. Polychaet., p. 37 (156), pl. 7 f. 39-39E. (Female or Sacconereis.)
1874. *Stephanosyllis ornata* VERRILL, Amer. Jour. Sci., 4, p. 132. (Stem form).
1874. *Stephanosyllis picta* VERRILL, ibid., pl. 4, f. 6. Also as *nomen nudum* in text, p. 43. (Stem form.)
1864. *Non Procerea picta* EHLERS. Die Borstenwürmer, p. 256.
1881. *Autolytus alexandri* VERRILL, Trans. Conn. Acad., 4, p. 294, pl. 12, fig. 8-8A. (Male or *Polybostrichus*.)
1892. *Autolytus verrilli* MARENZELLER, Zool. Jahrb., Syst., 6, p. 416, pl. 19, fig. 4.

This species is represented by two epitokous, or pelagic, males taken in the plankton net in Bering sea. It was previously known from off the coasts of Spitzbergen and Greenland and southward in the Atlantic to the shore of New England.

LOCALITY.—Alaska: Bering sea. Station 17 *a*, *b*, *c* (latitude 60° 9′ N., longitude 167° 38′ W.) Surface.

HESIONIDAE.

Psammate aphroditoides (Fabricius).

1780. *Nereis aphroditoides* Fabricius, Fauna Groenl., p. 296.
1867. *Castalia Fabricii* Malmgren, Annul. Polychaet., p. 32.
——. *Castalia arctica* Malmgren, ibid., p. 32.
1908. *Non Castalia arctica* McIntosh, British Annelids, 2, pt. I, p. 125.

One entire and two incomplete specimens from Bernard harbour are referable to this species, as are also several from Port Clarence, Alaska. The Bernard harbour specimens are the larger, the complete one having a length of 17 mm., and are darker in colour. The Port Clarence specimens measure under 10 mm. in length. They are pale fulvous, in part of a weakly greenish ca·· but no red lines, such as mentioned by Fabricius as frequently present, are detectable.

In the character of the parapodia these specimens conform to Fabricius' original description, though differing obviously from the form taken on the west coast of Ireland at a depth of 90-125 fathoms, and described and figured by McIntosh under the name *Castalia arctica* Malmgren.[1] The parapodium in general form much more resembles that of *P. punctata* (O. F. Müller), excepting for the presence of notopodial setæ in the latter. It terminates similarly in three conspicuous papillæ as mentioned by Fabricius. McIntosh's figure shows the parapodium of his specimen to be strongly conical, relatively very deep at base, instead of having the longer, more nearly cylindrical form of the true arctica or aphroditoides, and to present but a single papilla at the end. The head of the British form is represented as anteriorly much more convex than in the specimens of *aphroditoides* secured by the Canadian Arctic Expedition. The British form seems not to be the same species, and may be tentatively designated as *P. britannica*, n. sp.

P. aphroditoides has been previously recorded from Greenland, Siberia, and Bering strait.

Locality.—Alaska: Grantley harbour. Station 20 *b*, *c*. Depth, 2 3 fathoms. Bottom, sandy mud with algæ. July 30, 1913.

Alaska: Port Clarence. Station 20*g*. Depth, 2 3 fathoms. Bottom, gray mud with brown and red algæ. August 16, 1913.

Northwest Territories: Bernard harbour. Station 37*c*. Depth, 2 fathoms. September, 1, 1914.

SPHAERODORIDAE.

Ephesiella minuta (Webster and Benedict).

1887. *Ephesia minuta* Webster and Benedict, Rept. U. S. Comm. Fish. for 1885, p. 728, pl. 4, f. 64–66.

Locality.—Alaska: off Collinson point. Station 27*s*. October 3, 1913. Depth, 3 fathoms. Bottom, mud and gravel with algæ.

Two specimens from this locality seem not to differ from *minuta*, which was previously known from the coasts of Maine and Spitzbergen. Each is near 5 mm. in length. No seta with appendage in place was found, the specimens having been considerably rubbed. The capsules and papillæ of the general surface appear to be typical and the parapodia have the characteristic form and papillation.

[1]British Annelids, 1908, 2, pt. 1, p. 125, pl. 58, f. 14, pl. 63, f. 15, pl. 78, f. 3-3a.

NEREIDAE.

Nereis pelagica Linné.

1758. Syst. Nat. ed. 10, I, p. 654.
1770. *Nereis ferruginea* Gunner, Skrift. Kjobenh. Selskab., 10, p. 169, pl. e, f. 10.
1776. *Nereis verrucosa* O. F. Müller, Zool. Danica Prodr., p. 217.
. *Nereis fimbriata* O. F. Müller, ibid., p. 217.
1828. *Nereis margaticera* Blainville, Dict. Sci. Nat., 57, p. 470.
1829. *Lycoris margaritacea* Johnston, Zool. Jour., 4, p. 420.
1829. *Lycoris viridis* Johnston, ibid., p. 419.
. *Nereis fulgens* Dalyell, Pow. Creat., 2, p. 153, pl. 22, f. 6-8.
1840. *Nereis renalis* Johnston, Ann. Nat. Hist., 5, p. 176. (Epitokous male.)
1842. *Heteronereis arctica* Oersted, Nat. Tidssk., 4, p. 117. (Epitokous female.)
1842. *Heteronereis assimilis* Oersted, ibid., p. 117. Epitokous female.)
1843. *Heteronereis arctica* Oersted, Groenl. Annul. Dorsibr., p. 179, f. 56*, 51, 60, 65, 68, 70*. (Epitokous male.)
. *Nereilepas fusca* Oersted, Annul. Dan. Consp., p. 21, f. 49, 50. (Epitokous female).
. *Nereis grandifolia* H. Rathke, Beitr. . . na Norweg., p. 155, pl. 7, f. 13, 14. (Epitokous male.)
1853. *Nereis denticulata* Stimpson, Inverteb. Grand Manan, p. 33, f. 23. (Epitokous female.)
1865. *Nereis Reynaudi* Quatrefages, Hist. Nat. Annel., I, p. 519.
. *Nereis Bowerbanckii* Quatrefages, ibid., I, p. 541.

Seven large specimens partly disintegrated, were taken from the stomach of *Salvelinus malma* Walb. at Bernard harbour. In the probosces of these specimens the paragnatha of VI vary from three to five, with four as the most frequent number, these being large in size as is typical. The paragnatha of I vary from one to four, in the latter case being arranged as at the angles of a diamond-shaped area instead of in a line, as is more usual. The band across VII and VIII with the smaller caudal paragnatha in all the specimens examined in fewer series than usual. A specimen from Port Burwell on Hudson strait is atypical in dentition, bearing in each area VI only two large stout teeth contiguous with each other in a transverse line. The minor posterior denticles of VII and VIII are comparatively few.

This is a cosmopolitan species widespread in the Arctic and Antarctic oceans and in the Atlantic and Pacific oceans along the European, American, and European coasts.

Localities.—Northwest Territories: Bernard harbour. Station 42*d*. September 3, 1915. Six specimens from stomach of *Salvelinus malma* Walb.

Northwest Territories: Bernard harbour. Station 41*a*. August 24, 1915 One specimen from the stomach of a 30-inch *Salvelinus malma* Walb.

Hudson bay: Northwest Territories: Fullerton. *Neptune* Expedition September 19, 1904. A. Halkett. Two specimens.

Hudson strait: Ungava: Port Burwell. *Neptune* Expedition, 1903-4. A. Halkett. Two specimens, one very small, with posterior portion of a third.

Hudson strait: Ungava: King George's sound. Depth, 40 fathoms. *Diana* Expedition. September 9, 1897. Three small specimens.

ONUPHIDIDAE.

Onuphis conchylega Sars.

1835. *Onuphis conchylega* Sars, Beskr. og Iakttt., p. 61, pl. 10, f. 28a–28c.
1843. *Onuphis Krohnii* Oersted, Groenl. Annul. Dorsibr., p. 20, pl. 3, f. 33–41, 43.
1851. *Diopatra Krohnii* Grube, Fam. Annel., p. 43.
1865. *Northia conchylega* Johnston, Cat. Worms Brit. Mus., p. 138.
1882. *Onuphis hyperborea* Hansen, Nyt Mag. f. Natur. 24, p. 268.

Locality. Northwest Territories: Dolphin and Union strait, off Stapylton bay. Station 13*b*. September 14, 1915. Depth, 50–60 meters. Bottom, gray mud with pebbles; no algæ.

The anterior end, consisting of forty-two segments, of a single specimen was taken in situ in its tube. It is 40 mm. long with a width, exclusive of parapodia, of 2.6 mm. The anterior segments are crossed by reddish-brown stripes, the stripes across the anterior border of each segment. The tube is composed of flattened pebbled, fragments of shells and grains of sand in the typical manner.

This species is well-known from Norway, Finmark, Nova Zembla, Iceland, Greenland, Davis strait, Bering sea, the eastern coast of North America south to Long island and on the European south to Great Britain. In the more southern localities mentioned it is usually taken at depths of 40 fathoms and below.

LUMBRINEREIDAE.

Lumbrinereis fragilis (O. F. Müller).

1776. *Lumbricus fragilis* O. F. Müller, Zool. Danica Prodr., p. 216.
1825. *Nereis fragilis* Blainville, Dict. Sci. Nat., 34, p. 454.
1828. *Scolicina fragilis* Blainville, ibid., 57, p. 492.
1833. *Lumbrinereis fragilis* Audouin and Milne Edwards, Ann. Sci. Nat., 28 p.
1851. *Lumbrinereis fragilis* Grube, Fam. Annel., p. 45.
1864. *Lumbrinereis borealis* Kinberg, Öfvers. af K. Vet.-Akad. Förh., no. 10, p.

One specimen is referred to this species is among the material from Hudson bay. The specimen is 180 mm. long, including a regenerated caudal region about 15 mm. long and consisting of about forty-five segments. The prostomium appears relatively rather broader across base than usual. Maxillæ II with five teeth. This form is abundant in northern waters, as about Greenland, Nova Zembla, Spitzbergen, Siberia, and Bering strait, and extends southward in the Atlantic along both the North American and the European shores.

Locality.—Hudson bay, East side, in Richmond Gulf. June, 1899. 15–25 fathoms. A. P. Low collector.

Lumbrinereis sp.

A single specimen only 7 mm. long of uncertain species.

Locality: Arctic Canada: Dolphin and Union strait, off Cockburn point. Station 43*a*. September 13, 1915. Depth, 100 meters. Bottom, gray mud and pebbles. No algæ.

SPIONIDAE.

Spio mimus, n. sp.

The one specimen of this form secured is about 15 mm. long. It is broadest anteriorly near the ninth somite, in front of which it is pointed and caudad of which it narrows continuously to the posterior end at first gradually and then more strongly. The specimen is complete and consists of forty-five segments or near that number.

Type specimen. Cat. No. 35, Victoria Memorial Museum, Ottawa.

The prostomium protrudes anteriorly in a rounded process much as in *S. filicornis*. The sides are subparallel back to the level of the first parapodia from where they converge caudad, the caudal end of the prostomium being narrowly rounded and lying at the anterior edge of the second setigerous somite. The median ridge of the prostomium rises posteriorly and expands into a rounded elevation on which the eyes are borne. There are two pairs of eyes with slight pigmentation on one side indicating a possible intermediate eye. The posterior eyes are smaller and much nearer to each other than the anteriors. (See Pl. III, fig. 1).

Parapodia all of the usual well-developed biramous type. Both notopodium and neuropodium throughout have well-developed postsetal lamellæ which in general are low, vertically elongate and evenly rounded. The neuropodial lamella at the posterior end becomes relatively longer, more cirriform. The dorsal lamella is fused at the base with the branchia. It remains at the same general form over most of the body but at the posterior end becomes gradually increased in length and finally much elongate and branchiform. The branchiæ are present on all parapodia excepting the last two pairs. The first branchiæ are short, the following ones increasing in length and soon attaining the maximum when they ordinarily extend more or less obviously beyond the middorsal line and are proportionately heavy. At the posterior end the branchiæ become reduced and in the last few pairs are much exceeded in length and thickness by the dorsal lamella which in the meantime has become cirriform and sometimes a little clavate. The last branchiæ occur on the third pair of parapodia from the last and are merely slight tubercles. (See Pl. III, fig. 3).

Only capillary setæ are present in the first sixteen or seventeen pairs of parapodia. Those of the posterior series are broad, bilimbate setæ with fine, often curving tips. The anterior setæ are finer. The superior dorsals are of the finer capillary type. On the seventeenth parapodia crochets make their appearance in the neuropodial fascicle, at first one and two in number, and then increasing to nine, which seems to be the prevailing number. The crochets are of nearly uniform width over most of their length, the free portion moderately evenly curving. At the distal end of the shaft narrows to a rather slender neck above which it terminates in two teeth of which the apical is much smaller and acute. Distal end completely sheathed, the sheath widening distad and then rounded at the end. Shaft strongly fibrillate. (See Pl. III, fig. 4).

The caudal end of the body ends in four papillæ of which the ventral are much stouter than the dorsals, reversing the condition, e.g., in *S. mesnili* (*Euspio* McIntosh). (See Pl. III, fig. 2).

LOCALITY. Alaska: Collinson point. Station 27*o*. September 20, 1913. "Pelagic under 5 inches of ice over 1 foot of water. Lagoon at Collinson point." One specimen.

This species resembles *S. filicornis* (O. F. Müller). It differs in the character of parapodia and branchiæ in the posterior region, the great reduction of the branchiæ and the elongate, cirriform or subcirriform character of the lamellæ, etc. Contrasting conspicuously with the condition in *filicornis*, in which the branchiæ remain long and the lamellæ are not thus modified. The crochets first appear farther caudad than in *filicornis*, etc.

Scolecolepides arctius, n. sp.

Type specimen, Cat. No. 36, Victoria Memorial Museum, Ottawa. Paratypes, Victoria Memorial Museum, No. 37; Mus. Comp. Zool., No.'s 2194 and 2195. Four specimens.

The type is about 23 mm. long, with a width of 1·7 mm. It consists of about seventy-five setigerous segments. The body is flattened dorso-ventrally and is pointed at both ends.

The prostomium is long, pointed behind and broad, and truncate in front. Posteriorly it reaches to the second setigerous somite. Four indistinct eye-spots are present in the same position as in *benhami* but with those of the anterior pair nearer to each other than the posteriors instead of the reverse. The appendages are attached at the anterolateral angles somewhat beneath, as in *benhami*; they are cylindrical and are proportionately much shorter than in the latter species. No tentacular cirri are present. (Pl. III, fig. 5).

The parapodia are of the usual biramous type. Each notopodium and neuropodium has a prominent, flattened, postsetal lobe of which the notopodial is longer than the neuropodial. The postsetal lobe in the anterior region is vertically subelliptic with one edge attached (Pl. III, fig. 6); but in the posterior region it becomes proportionately narrower vertically and at the same time higher (Pl. III, fig. 7). The postsetal lobes decrease notably in size in the caudal region.

Branchiæ are present on somites beginning with the first setigerous. They are free from the notodial lobes excepting at their bases. Cylindrical and filiform. They are moderately long in the anterior region though in no case equalling the width of the somite and behind the narrow pointed region scarcely surpassing the middorsal line. The branchiæ remain of nearly uniform length and thickness until about somite XX when they begin to decrease in length and thickness and practically cease on somite XXIX, though represented in the form of nodules as rudiments at the bases of the postsetal processes. Posterior region wholly free from branchiæ.

The setæ in both notopodia and neuropodia are in two series, an anterior and a posterior one, in addition to those of the inferior ventral group and superior dorsal group. In both branches of all paradodia occur fine capillary, apparently non-limbate setæ in an anterior series, and broader, limbate setæ in a posterior series. In going caudad a limited number, mostly three or four, hooded crochets replace setæ of the posterior series, first in the neuropodia and then in the notopodia, the setæ of the anterior series remaining unchanged. The setæ of the inferior ventral group are bilimbate, distally pointed, the tips curving caudad and usual. The superior dorsal setæ are much more elongate than the more ventral ones. In a typical neuropodium of the middle and posterior regions, at least, there is also a corresponding dorsal neuropodial group of more elongate capillary setæ, though these were not detected in all cases. (See Pl. III, fig. 7). The crochets are of the usual general form, distally narrowed and bidentate, and hooded. The hooded region colorless, more or less transparent; the shaft in part strongly fibrillate. (See Pl. IV, fig. 1).

Anus surrounded with numerous short papillæ.

Locality.—Alaska: Collinson point. Station 27*o*. September 20, 1913. Mr. Johansen's field-note accompanying these specimens states that they were "Pelagic under 5 inches of ice over 1 foot of water in lagoon at Collinson point."

Alaska: Lagoon at Collinson point. Station 27*i*. September 18, 1913. "Pelagic under 5 inches of ice over 4 feet of water." Two anterior fragments.

This species, so far as appears from Ehlers' account of *S. benhami*[1], is congeneric with the latter, the only other known *Scolecolepides*. The type of *S. benhami* was taken by Prof. Benham at Moeraki, South New Zealand. The

[1]Abh. K. Ges. Wiss. Gottingen, Math.-phys. Kl., n.s. 1907 5, no. 4 p. 14.

present species is a less slender form than the genotype and consists of a much smaller number of somites,—seventy-five as against two hundred and six. The branchiæ in *benhami* become much longer, at their maximum equalling the width of the segments; they continue to the eighty-sixth segment, instead of terminating near the twenty-ninth or earlier. In *arctius* the fine, elongate capillary setæ of the superior group of notopodia, and in part, at least, of neuropodia, seem to form a characteristic feature.

Anaspio, n. gen.

Prostomium without cornua, rounded anteriorly and prolonged caudad; without nuchal cirrus. In genotype one pair of eyes. Branchiæ in genotype two pairs, on third and fourth somites, wholly free from the parapodial lamellæ. Parapodia all free from each other, none of the neuropodia being connected by a membrane; no interparapodial pouches. Anterior parapodia bearing only capillary setæ. Hooded crochets appearing in neuropodia caudad but notopodia remaining with only capillary setæ. Crochets with beak bifid and lacking apical tooth.

Genotype. *A. boreus*, n. sp.

Close to *Spionides* but wholly lacking the characteristic lateral pouches of the latter and the nuchal cirrus. The crochets seem to be of distinctive form.

Anaspio boreus, n. sp.

Type specimen.—Cat. No. 38, Victoria Memorial Museum, Ottawa. One specimen.

The type is incomplete caudally, at present embracing the head and thirty-six setigerous somites. It is only 12 mm. long. Body depressed, moderately convex above, more flattened beneath, covered in part anteriorly by the foliaceous developments of the parapodia.

The prostomium is elongate, narrowly subtriangular with base cephalad. Anterior end weakly convex. Posteriorly it is prolonged to or nearly to the third setigerous segment in a thick palpoidal process fused with the dorsum throughout. Just in front of the beginning of this posterior region is one pair of eyes; these are small and wide apart. Vague pigment specks may represent a second pair of eyes farther forward and farther apart. (Pl. IV, fig. 2).

The peristomium forms the lower lip and the usual lateral cephalic lobes, the latter broadly rounded posteriorly and narrowing cephalad. Tentacular cirri lost. (Pl. IV, fig. 2).

The parapodia are prominent and conspicuous, particularly anteriorly. They are broadly attached, with two lobes almost continuous. Presetal lobes low, but the postsetal lamellæ large and foliaceous. The postsetal lamella of notopodia I of moderate size, rising above in a triangular tip. The corresponding lamellæ of the second, third, and fourth parapodia are much longer, being longest all along the setigerous line with the dorsomesal ends much more prolonged, those of the third parapodia largest, overlapping above the dorsum. The notopodial lamellæ of the fifth and sixth parapodia are abruptly smaller and more widely separated, though still large and pointed above. The following ones rapidly lose their dorsal prolongations, becoming lower and evenly rounded, their dorsomesal edges in the first few extended mesad and conspicuously connected across dorsum in a low ridge or integumental fold, this fold becoming less marked posteriorly. Posteriorly the postsetal lamellæ both of notopodia and of neuropodia become low and inconspicuous. The postsetal lamellæ of the anterior neuropodia vertically much shorter than those of the notopodia, but high, decreasing in size in correspondence with the reduction of the dorsal lamellæ.

There are only two pairs of branchiæ, these occurring on the third and fourth setigerous segments. They are thick, subconical processes free from

the notopodial lamellæ above the tips of which they do not rise and by which they are largely concealed.

As usual, only capillary setæ are found in both branches of the anterior parapodia. In both notopodia and neuropodia they are very numerous and are arranged in the usual two series. Crochets first appear on or near the eleventh parapodia, one or two in each, increasing in number caudad. The ordinary capillary setæ are characterized by being densely and coarsely punctate, the punctae in part elongate or in form of short lines. The crochets are hooded, the membranous shields somewhat clavately widening distad and extending completely over the head. The head is large and extends at right angles to the axis of the adjacent part of the shaft; it lacks an apical denticle and the process is cleft somewhat like the beak of a bird. (See Pl. IV, fig. 4.)

Locality.—Unfortunately the locality label with the type, after its separation, was displaced. There seems little doubt, however, that it was from Collinson point, Alaska, probably from Station 27*o*.

Larval Spionid A.

Two larvæ of this form were secured in plankton among the more numerous phyllodocid larvæ (*Paranaitis* sp.). These are Nerine-like forms. The prostomium is anteriorly pointed, the point less prolonged and less acute than in corresponding stages of *Nerine cirratulus*. Two pairs of eyes are present. Palpi well-developed, thick. In one specimen twenty setigerous segments are present. The development of the parapodial lamellæ has progressed considerably, the postsetal notopodial lamellæ on the anterior segments showing already a distal elongation. Capillary setæ alone are present on the first thirteen pairs of parapodia. On the fourteenth hooded crochets appear in the neuropodia and continue to the last, the maximum number attained being three. (See pl. IV, fig. 6.) No crochets were detected in any of the notopodia. Length 1.5 mm. The general form and structure of the specimen is shown in Pl. IV, fig. 5.

The second specimen is of nearly the same length, but is proportionately more slender and presents twenty-four or twenty-five setigerous segments. It is otherwise similar in general form and structure to the other specimen.

Locality.—Alaska: Grantley harbour. Station 20*a*. July 30, 1913 Surface.

Larval Spionid B.

With the field notes made by the marine zoologist of the expedition (Mr. Johansen) are two sketches of larvæ which are obviously spionids. Specimens of these forms, however, were not in the material submitted for study, so that various desirable details cannot be ascertained with reference to them.

(*a*) The first sketch represents a spionid, noted as less than 1 mm. in length, in which both anterior and preanal ciliary rings are present. There are fourteen setigerous segments. The palpi are subconical, distally rounded organs and project caudocetad. Across the anterior end of the prostomium are shown eight eyes, of which three on each side form a triangular group. The prostomium is anteriorly slightly indented, not at all pointed.

Locality.—Dolphin and Union strait (off Bernard harbour). Station 40*c*. June 7, 1915. Pelagic. Ice 6 feet, over 9 feet of water.

(*b*) The second sketch is of an apparently older larva about 2 mm. long. It is similar in general appearance to the preceding. Nineteen setigerous somites are represented. Both anterior and preanal ciliary bands represented as still present. Prostomium and palpi similar to those of (*a*). Only four eyes, two of each outer group of the preceding form being absent. The sketch also represents the eyes as farther caudad than in the other form, being shown, in fact, as just behind the ciliary band instead of in front of it.

Locality.—Alaska: off Martin point. Station 32*c*. July 30, 1914.

CIRRATULIDAE.

Cirratulus cirratus (O. F. Müller).

1776. *Lumbricus cirratus* O. F. Müller. Zool. Danica Prodr., p. 214.
1825. *Cirratulus fuscescens* Johnston, Edinb. Philos. Journ., 13, p. 219.
——. *Cirratulus flavescens* Johnston, ibid., p. 219.
1828. *Cirratulus borealis* Blainville, Dict. Sci. Nat., 57 p. 490.
1833. *Cirratulus medusae* Johnston, Mag. Nat. Hist., 6, p. 124, fig. 13.
1844. *Cirratulus medusa* W. Thompson, Ann. Nat. Hist., 13, p. 437.
1857. *Cirratulus cirratus* Koren, Nyt. Mag. f. Naturvid., II, p. 94.
1858. *Cirratulus borealis* Grube, Mem. Sav. Étrang. St. Petersb., 8, p. 15.

The one small specimen of *Cirratulus* in the collection is apparently this species. It is a small specimen measuring not more than 15 mm. in length. It lacks all branchiæ at present; but the scars show a group of seven special branchiæ on each side of the first setigerous segment to have been present. The eye bands are conspicuous and of the typical form. The specimen at present is dark brown.

This is a widely distributed species known from Scandinavia, Finmark, Greenland, Labrador, Siberia, and Bering sea, and from southward in the Atlantic to the coasts of the United States and Great Britain.

Locality.—Northwest Territories: Bernard harbour, outer part. Station 41. July 20, 1915. Depth, 3–5 fathoms. Bottom, sandy mud with algæ.

OPHELIIDAE.

Travisia forbesii Johnston.

1840. *Travisia Forbesii* Johnston, Ann. Nat. Hist., 4, p. 373, pl. II, f. 11–18.
1843. *Ammotrypane oestroides* H. Rathke, Nova Acta Acad. Leop. Car. 20, p. 192, pl. 10, f. 9–19.
1843. *Ophelia mammilata* Oersted, Annul. Dorsibr., p. 53, pl. 8, f. 103, 112, 114, 119–120.

A form ranging from Great Britain northward to Scandinavia, Spitzbergen, Iceland, and Greenland, and from there southward to New England.

Locality.—Northwest Territories: Bathurst inlet, Banks peninsula. May 18, 1916. Station 48*b*. Numerous specimens taken from the stomachs of two female individuals of tomcod, *Microgadus proximus* Gill, respectively 14 and 15.5 inches in length, collected by R. M. Anderson.

ARENICOLIDAE.

Arenicola marina (Linné).

1758. *Lumbricus marinus* Linné, Syst. Nat., ed. 10, I, p. 648.
1775. *Lumbricus littoralis* Olafsen and Povelsen, Reise durch Island, 2 p. 478, pl. 5, f. 8.
1780. *Lumbricus papillosus* Fabricius, Fauna Grœnland., p. 279.
1788. *Nereis lumbricoides* Pallas, Nova Acta Acad. Petrop., 2, p. 233, pl. 5, f. 8.
1801. *Arenicola piscatorum* Lamarck, Syst. Anim. sans Vert., p. 324.
1802. *Arenicola carbonaria* Bosc., Hist. Nat. Vers, I, p. 161, pl. 6, f. 3.
1816. *Arenicola tinctoria* Leach, Encycl. Brit., Suppl. to ed. 4–6, I, p. 452.
1817. *Arenicola clavata* Ranzani, Opusc. Sc., 2, p. 110, pl. 4.
1854. *Arenicola natalis* Girard, Proc. Bost. Soc. Nat. Hist., 5, p. 88.

1863. *Clymenides sulphurea* CLAPARÈDE, Beobacht. Anat. Wirb., p. 30, pl. 15, fig. 24–27.
1884. *Arenicola glacialis* MURDOCH, Proc. U.S. Nat. Mus., 7, p. 522.

This, the common lugworm, is primarily a north Atlantic and Arctic form occurring at Spitzbergen, Kara sea, about Iceland and Greenland, and southward on the North American coast to New England and on the European to Great Britain and Portugal. It also occurs rather rarely in the Mediterranean. A specimen collected by Middendorf in eastern Siberia and identified by Grube (1851) as *A. piscatorum*, is with little doubt the present species, which seems thus to have a circumpolar distribution. It is supplanted in the north Pacific by *A. pusilla* Quatrefages. It is somewhat doubtfully recorded from Chile, the Marquesas, etc., in the southern Pacific.

LOCALITY.—Northwest Territories: Bernard harbour. Station 49*h*. June 17, 1916.

A single specimen of the species was taken from the stomach of an 8·75 inches long sculpin, *Cottus* sp., caught in about 2 fathoms of water.

FLABELLIGERIDAE.

Flabelligera affinis (Sars).

1829. *Flabelligera affinis* SARS, Bidrag til Soedyr. Nat., I, p. 31, pl. 3, f. 16.
1839. *Chloroema Edwardsii* DUJARDIN, Ann. Sci. Nat., ser. 2, II, p. 288, pl. 7, f. 1–5.
1840. *Siphonostomum papillosum* GRUBE, Actin. Echin. u. Würm., p. 68.
1841. *Siphonostoma diplochaitos* DELLE CHIAJE, Descriz., 3, p. 77, pl. 99, f. 8.
1843. *Siphonostomum vaginiferum* H. RATHKE, Nova Acta Acad. Leop.-Carol., 20, p. 211, pl. 11, f. 3–10.
——. *Siphonostoma Dujardini* QUATREFAGES, Ann. Sci. Nat., ser. 3, 12, p. 282, pl. 9, f. 1–9.
1849. *Chloroema sordidum* QUATREFAGES, Ann. Sci. Nat., ser. 3, 12, p. 285, pl. 9, f. 10.
1853. *Siphonostoma gelatinosa* DALYELL, Pow. Creat., 2, p. 256, pl. 18, f. 10–12.
——. *Tecturella flaccida* STIMPSON, Inverteb. Grand Manan, p. 32, 3, f. 21.
1865. *Siphonostoma uncinata* JOHNSTON, Cat. Annel. Brit. Mus., p. 223 and 344.
1867. *Flabelligera affinis* MALMGREN, Annul. Polychæt., p. 83.
1873. *Chloroemum pellucidum* SARS, Nyt Mag. f. Naturvid., 19, p. 252.

Many large specimens of this species were secured. It is a form common on the shores of Greenland and is known to occur as well at Iceland, Spitzbergen, Scandinavia, Finmark and Bering sea, and southward along the coasts of North America to the northern shores of the United States and along the European shore to Ireland.

LOCALITIES.—Northwest Territories: Bernard harbour, Station 41, July 20, 1915. Depth, about 10 meters. Ten specimens taken on a sandy bottom among *Laminaria*.

Northwest Territories: Bernard harbour. Station 42*e*. September 3, 1915. Several specimens taken from the stomach of a large female bearded seal, *Erignathus barbatus* (Erxleben).

Northwest Territories: Dolphin and Union strait: Cockburn point. Station 37*o*. October 3, 1914. Many specimens were taken at this station from the stomach of a male *Erignathus barbatus* (Erxleben), 73 inches long.

Northwest Territories: Bernard harbour, outer part. Station 41*f*. August 1, 1915. Depth, about 5 meters. Bottom, sandy mud with stones and brown algæ. One small specimen (18 mm. long.) A colored sketch of this specimen made in the field by Mr. Johansen shows that in life the colors were essentially typical, the green branchiæ, etc., being prominent.

Brada villosa (Rathke).

1843. *Siphonostoma villosum* H. RATHKE, Nova Acta Acad. Leop.-Car., 20, p. 215, pl. 11, f. ii and 12.
1858. *Siphonostomum villosum* GRUBE, Mem. sav. étrang. St. Petersb., 8, p. 16.
1865. *Pherusa villosa* QUATREFAGES, Annel., I, p. 483.
1867. *Brada villosa* MALMGREN, Annul. Polychæt., p. 84.
1882. *Trophonia arctica* HANSEN, Norw. North Atlantic Exped., Annel., p. 39, pl. 7, f. 17–20.

LOCALITY.—Northwest Territories: Bernard harbour, outer part. Station 41. July 20, 1915. Two specimens from a depth of 3–5 fathoms on bottom of sandy mud with algæ.

MALDANIDAE.

Paraxiothea catenata (Malmgren).

1865. *Axiothea catenata* MALMGREN, Öfvers. Svensk. Vet. Akad. Förh., p. 190.
1893. *Clymene catenata* LEVINSEN, Vid. Meddel. nat. Foren. Kjöbenh., p. 143.
1900. *Clymenella* (*Axiothella*) *catenata* VERRILL, Trans. Conn. Acad. Arts and Sci., 10, p. 657.
1907. *Axiothella catenata* ARVIDSSON, Zool. Jahrb. Suppl., 9, p. 209, pl. 5, f. 166–170, pl. 9, f. 308–311.

This is essentially a purely arctic species, the more southern records, as those about Scotland, being apparently due to misidentification. It has a circumpolar distribution, having been previously recorded from White sea, Spitzbergen, Greenland, Siberia, and Bering strait. In the material of the present collection is a fragment consisting of [illegible] or ten segments. It is 57 mm. long, with a maximum diameter of 4·5 mm.

LOCALITY.—Ungava: Port Burwell. *Neptune* Expedition, 1903.

TEREBELLIDAE.

Amphitrite cirrata Müller.

1776. *Amphitrite cirrata* O. F. MÜLLER, Zool. Danica Prodr., n. 2617.
1788. *Terebella cirrata* GMELIN, Linn. Syst. Nat., I.
1803. *Sabella cirrata* MONTAGU, Test. Brit., p. 550.

One specimen of this species is in the collection. A species widespread in boreal and arctic regions of the Atlantic ocean and its branches and ranging to the Mediterranean. It is common about Iceland and along the shores of Greenland from where it extends southward along the North American coast. Wiren doubtfully refers a specimen from the Bering strait to this species.

LOCALITY.—Ungava: Port Burwell. *Neptune* Expedition, 1903–4. A. Halkett, collector.

Nicolea venustula (Montagu).

1818. *Terebella venustula* MONTAGU, Trans. Linn. Soc. London, 12, p. 344, pl. 13, f. 2.
1844. *Terebella zostericola* OERSTED, De Reg. Marin., p. 68.
1849. *Terebella parvula* LEUCKART, Archiv Naturg., 15, pt. I, p. 177.
1865. *Nicolea arctica* MALMGREN, Öfvers. af K. Vet. Akad. Förh., p. 381, pl. 24, f. 66–66D, 67–67C.

LOCALITY. Northwest Territories: Bernard harbour, outer part. Station 41. July 20, 1915. Depth, 10 meters. Bottom, sandy mud with *Laminaria*. One broken specimen.

Well known from the Arctic and North Atlantic, and occurring as far south as the Mediterranean sea. On the American side it has been previously recorded from Greenland and Davis strait, Labrador, New England, and Bering sea.

Thelepus cincinnatus (Fabricius).

1780. *Amphitrite cincinnatus* Fabricius, Fauna Groenl., p. 286.
1817. *Terebella cincinnata* Savigny, Syst. Annel.
1818. *Sabella conchilega* Montagu, Trans. Linn. Soc. Lond. 12.
1826. *Terebella lutea* Risso, Hist. Nat. Eur. Merid., 4.
1847. *Terebella mandida*, Frey and Leuckart, Beitr. Wirb. Thiere, p. 154.
1849. *Thelepus Bergmanni* Leuckart, Archiv. Naturg., 15, pt. I, p. 169.
1853. *Lumara flava* Stimpson, Marine Inverteb. Grand Manan, p. 30.
1860. *Terebella pustulosa* Grube, Archiv. Naturg., 26, pt. 1, p. 100.
1865. *Thelepus circinnatus* Malmgren, Öfvers. vet. Akad. Förh., p. 381, pl. 22, f. 58.
—. *Venusia punctata* Johnston, Cat. Annel. Brit. Mus.
—. *Heterophyselia cincinnata* Quatrefages, Hist. Annel., 2, p. 387.
—. *Phenacia terebelloides* Quatrefages, op. cit., p. 375.
—. *Phenacia pulchella* Parfitt.
1869. *Phenacia ambigrada* Claparède, Annel. Golfe Naples, p. 402, pl. 18, f. 6.
—. *Phenacia retrigrada* Claperède, ibid., p. 403, pl. 18, f. 7.
1871. *Thelepodopsis flava* Sars, Vidensk. Selsk. Forh.
1902. *Thelepus antarcticus* Willey, Polychæt. Voyage of *Southern Cross*.

Locality.—Hudson strait Ungava: King George's sound. September 9, 1897. *Diana* Expedition. Low and Wakeham. One specimen in poor condition, with tube.

A species of exceedingly wide distribution, occurring in the Antarctic as well as the Arctic region, where it is abundant, and also found in both the Atlantic and Pacific oceans, probably more or less continuously between the two polar regions.

Terebellides stroemi Sars.

1835. *Terebellides Stroemi* Sars, Beskriv. og Iakttag., p. 48, pl. 13, f. 31a–d.
1846. *Corephorus elegans* Grube, Archiv. Naturg., 12, 1.
1853. *Terebella pecten* Dalvell, Pow. Great., 2, p. 208, pl. 26, f. 9.
1874. *Terebellides gracilis* Malmgren, Göteborg. K. Vetensk. och Vitterh. Handl., ny tidsf., 14.

Localities.—North of Alaska: Station 23 (latitude 70° 24′ N., longitude 161° 25′ W). August 19, 1913. Depth 9 to 10 fathoms. Gray mud with pebbles; no algæ. Alaska: Collinson point. Station 27*s*. October 3, 1913. Depth, 3 fathoms. Bottom, mud with pebbles.

Two specimens which seem fully to conform to this species. It is a widespread and commonly abundant species in Arctic and northern waters, and extends southward in the Atlantic to the Mediterranean on the eastern and to southern New England on the western coast and in the Pacific to Japan.

AMPHARETIDAE.

Samytha sexcirrata (Sars).

1856. *Sabellides sexcirrata* Sars, Fauna litt. Norvegiæ, 2, p. 23.
1865. *Samytha sexcirrata* Malmgren, Öfvers. k. vet. Akad. Förh., p. 370, pl. 20, f. 49–49D.

Locality.—North of Alaska. Station 23. (Latitude 70° 24′ N., longitude 161° 25′ W.) August 19, 1913. Depth 9 to 10 fathoms Gray mud with pebbles; no algæ.

One specimen of typical structure. Scars show the normal three pairs of branchiæ to have been present in two separated groups; but only one branchia remains in place on the specimen at present.

This is a primarily Arctic species of probably circumpolar distribution. It was previously known from the waters of Sweden, Spitzbergen, Greenland, Davis strait, Labrador, and New England.

Ampharete johanseni, n. sp.

Type specimen.—Cat. No. 39, Victoria Memorial Museum, Ottawa. Paratype, Mus. Comp. Zool., No. 2193. Two specimens.

This species seems generally to be readily recognizable from the characteristics of the branchiæ. The branchiæ of the two groups are only very narrowly separated at the middle line and the two mesal ones are connected at base by a rather high membrane. The first, second, and fourth branchiæ on each side counting from the most ectal, are in a transverse line and are of the same general size; but the third is crowded often a little caudad of the others and is characteristically much smaller in size, though varying considerably in the amount of its reduction.

The paleæ number typically from nine to twelve on each side. Slenderly attenuated to a fine tip, but the latter not at all abruptly set off. (See Pl. V, fig. 1.)

There are thirteen setigerous thoracic somites. The setæ narrowly limbate and finely tipped as usual. The uncini have only four teeth in each series, the plate as a whole subquadrate, with the abdental edge evenly curved, not shouldered or angulate. (See pl. V, fig. 2.)

First abdominal uncinigerous tori large, with edges rounded, the others progressively reduced in going caudad. No cirri were detected on any of them.

The type is 16 mm. long. A second specimen, which is incomplete caudally, is considerably broader.

Locality.—Alaska: off Collinson point. Station 27*s*. October 3, 1913. Depth, 3 fathoms. Bottom, mud and gravel, with algæ.

The tubes are composed of grains of sand adhering to a tough lining membrane.

Ampharete reducta, n. sp.

Type specimen.—Cat. No. 40, Victoria Memorial Museum, Ottawa. Paratype, Mus. Comp. Zool., No. 2192. Two specimens.

A species somewhat suggesting *A. arctica* in the form of the paleæ; but the tips are much more elongate and less abruptly set off, not shortly mucronate. (See Pl. V, fig. 3.) Also the paleæ are only half or less as numerous as in *arctica*, the number in each group being five or six. The paleæ are obviously coarser than in *johanseni*.

The branchiæ have the ordinary general arrangement, but with the ectal one of each group caudad of the general line, in the type being almost caudad of the adjacent one.

The usual fourteen pairs of fascaiæ of capillary thoracic setæ. These setæ limbate and finely tipped, as shown in Pl. V, fig. 5.

The uncini are of the same general type as in *johanseni;* but they are smaller and there are five teeth in each series in place of four and the end away from which the teeth are directed is less rounded, being slightly indented as in *arctica* but without so distinct an angle or shoulder as in the latter. (See pl. V, fig. 4.)

Length, 20 mm.

Locality.—Alaska: off Collinson point. Station 27*s*. October 3, 1913. Depth, 3 fathoms. Bottom, mud and gravel with alga.

Found with specimens of *johanseni*. The tubes of the two species are alike in structure and appearance.

Ampharete eupalea, n. sp.

Type specimen.—Cat. No. 31, Victoria Memorial Museum, Ottawa. One specimen.

The branchiæ are large and equal. They form a continuous straight line across the dorsum, the two mesal ones in contact, leaving no indication of an hiatus between the two groups.

The paleæ on each side are arranged in a strongly curved series forming about two-thirds of the circumference of a circle. In the type they number twenty-two or twenty-three in each series. The paleæ at the mesal end of the series on the dorsal side of the curve are much reduced in size. Each palea is acutely pointed distally, the tip not truly mucronate, though with a slight tendency toward that condition. The tip is curved gently toward the centre of the circle limited by the series. (See Pl. V, fig. 6.)

The thoracic notopodial setæ narrowly limbate and finely tipped as usual. The uncini of the type are obviously larger than those of the two preceding species. There are five teeth in each series, plate slightly indented at the end, the corners rounded. (See Pl. V, fig. 7.)

The type is incomplete, embracing only the anterior region of the thorax ten setigerous somites being present. The diameter is 3 mm.

Locality.—North of Alaska, Station 23. (Latitude 70° 24′ N., longitude, 161° 25′ W.) August 19, 1913. Depth, 9–10 fathoms. Bottom, mud with pebbles, no algæ. One specimen.

AMPHICTENIDAE.

Cistenides granulata (Linné).

1767. *Sabella granulata* Linné, Syst. Nat., ed. 12, I, p. 1268.
1780. *Amphitrite auricoma* Fabricius, Fauna Groenlandica, p. 289.
1843. *Amphitrite escrichti* Rathke, Nova Acta Acad. Leop.-Car., 20. p. 219.
1851. *Pectinaria groenlandica* Grube, Fam. Annel., p. 82, 138.

A species of circumpolar distribution.

Localities.—Northwest Territories: Bernard harbour, outer part. Station 41. July 20, 1915. Depth, about 10 meters. Bottom, sandy mud with *Laminaria*. Two specimens with tubes.

Northwest Territories: Bernard harbour, outer part. Station 41*c*. July 28, 1915. Depth, 3–8 fathoms. Bottom, mud with algæ.

Northwest Territories: Bernard harbour. Station 49. June 27, 1916. A broken tube from the stomach of a Pacific eider, *Somateria v-nigra* Gray.

Northwest Territories: Dolphin and Union strait, west of Cockburn point. Station 43*c*. September 14, 1915. Depth, 20–30 meters. Bottom, gray mud with stones, *Laminaria*, *Lithothamnion*, etc. Many of the characteristic tubes, all empty.

Hudson bay: Cape Fullerton, "shore of island." *Neptune* Expedition, September 25–29, 1903. Several tubes with animals *in situ* and preserved dry.

Alaska: Port Clarence. Station 20*g*. August 4, 1913. Depth, 2–3 fathoms. Bottom, sandy mud with algæ. A number of specimens in their tubes.

Alaska: Grantley harbour. Station 20 *b*, *c*. July 30, 1913. Bottom, sandy mud with algæ. A number of tubes with little doubt pertaining to this species. They are darker and rather more opaque than usual.

CAPITELLIDAE.

Capitella capitata (Fabricius).

1780. *Lumbricus capitatus* Fabricius, Fauna Groenlandica, p. 279.
1827. *Lumbricus litoralis* Johnston, Zool. Journ., 3, p. 328.
1828. *Capitella Fabricii* Blainville, Dict. Sci. Nat., 57, p. 443.

1842. *Lumbriconais marina* ØERSTED, Kröyer's Naturh. Tidsskr., 4, p 132, pl. 3, f. 6, 11–12.
1849. *Lumbriconais capitata* LEUCKART, Aufr. Naturg., 15, p. 163.
1857. *Capitella capitata* VAN BENEDEN, Bull. Acad. Roy. Belg., ser. 2, 3, p. 127, w. two plates.
1865. *Valla ciliata* JOHNSTON, Cat. Worms, Brit. Mus., p. 68.
1881. *Capitella prototypa capitata* CZERNIAWSKY, Bull. Moscou Soc. Nat., 56, p. 340.
. *Capitella intermedia* CZERNIAWSKY, ibid., p. 342.
. *Capitella similis* CZERNIAWSKY, ibid., p. 46.

An extremely widespread species. Aside from occurring in the Arctic and northern waters, as about Greenland, Iceland, Spitzbergen, and Scandinavia, it extends southward in the Atlantic along both the North American and European coasts, and is found as well in the Mediterranean sea, Black sea, and other European waters, Madeiras, straits of Magellan, Kerguelen, and the Antarctic region generally.

LOCALITIES Northwest Territories: Bernard harbour. Station 41. July 20, 1915. One specimen taken at a depth of 3 5 fathoms on a bottom of sandy mud among algæ.

Northwest Territories: Bernard harbour: inner harbour. Station 37*c*. September 1, 1914. Several broken specimens taken at 2 fathoms on a sandy bottom among algæ.

SABELLIDAE.

Chone ungavana, n. sp.

Type specimen.—Cat. No. 53, Victoria Memorial Museum, Ottawa. One specimen.

Total length, inclusive of branchiæ, about 42 mm. Length of branchiæ, 10 mm. Diameter, 1.6 mm.

Branchiæ, nine pairs. Their bases not concealed by the collar. All broad, united by a membrane to within about one mm. of the tips. The free tips broad, foliaceous, acuminate, with barbs absent from a terminal region of a little more than one-half mm. length.

Collar simple, on each side folded into the dorsal sinus, with small mesal fold subacute. Ventrally the collar not at all incised at the median line, but on the contrary, there slightly produced in a very obtuse angle.

Eight setigerous and one non-setigerous somite in the thorax and about forty-eight somites in the abdomen. The body is in general cylindrical, but is pointed at the caudal end. The thoracic and the anterior and median somites of the abdomen are biannulate. The fæcal groove is deeper and more distinct in the caudal region of the abdomen in the usual way.

The thoracic notopodial setæ are delicate and colorless and are of two general types. The superior ones are acute tapering capillary setæ which are narrowly limbate and finely tipped. The inferior setæ are much shorter and are of a subspatulate form, with one edge much straighter than the other; they are finely mucronate, the mucron long, asymmetrically situated at the angle adjacent to the straighter side. (See Pl. VI, fig. 1). The thoracic neuropodials are crochets with long manubria distally curving back, thus elevating the beak of the head. Head with beak large and nearly at right angles to adjacent part of the principal axis, the crest pectinate in the usual way. (See Pl. 6, fig. 2). The tori of the abdomen have uncini with beaks long and less divergent than in most other species, the sinus enclosed between the beak and body of uncinus narrower at its opening than at bottom. (See Pl. VI, fig. 3, 4).

LOCALITY. Ungava: Hudson strait: King George's sound. September, 1897. Depth, 40 fathoms. *Diana* Expedition. Low and Wakeham. One specimen.

This species suggests *C. duneri* Malmgren in the form of the abdominal uncini; but the beak is proportionately longer and less divergent and the body of the uncinus much narrower below, more uniform. The spatulate thoracic setæ are somewhat similarly asymmetrical but the mucron is much more divergent from the axis as shown in the figure. The species seems conspicuously different from *duneri* in the characters of the branchiæ, which are united much farther distad, with the free apical region proportionately much broader, widely winged, and the tip free from barbs much shorter. In this respect the form approaches the Alaskan *C. gracilis* Moore, though the free tips of the branchiæ in the latter are also longer. In *gracilis* the collar is notched ventrally, whereas in the present species it is there weakly angulate. The spatulate setæ of *gracilis* are symmetrical, or nearly so, instead of strongly asymmetrical. The beak of the crochets is more elevated, making a greater angle with the axis. And the abdominal uncini are different, the beak being more divergent and the body proportionately wider and more strongly curved. Moore (1898) has recorded as *Chone* sp. a caudal fragment from Egg harbour, Labrador, which is quite possibly the present species. At least it would seem to have uncini very similar to those of *ungavana*.

Euchone analis (Kröyer).

1856. *Sabella analis* Kröyer, Danske Vid. Selsk. Forh., p. 17.
1865. *Euchone analis* Malmgren, Öfvers. af Vet. Akad. Förh., p. 466, pl. 28, f. 88–88c.

Locality.—Northwest Territories: Bernard harbour, outer part. Station 41c. July 28, 1915. Depth, about 3 fathoms. Bottom, gray mud with *Laminaria*, etc. Many tubes, in part with animals *in situ*. "Had dark cross-bands on the otherwise pale tentacles" (Johansen's field-notes).

A common arctic form of circumpolar distribution, being known from Bering sea, Davis strait, Greenland, Spitzbergen, etc.

SERPULIDAE.

Serpula vermicularis Linné.

1767. *Serpula vermicularis* Linné, Syst. Nat., ed. 12, p. 1266.
1863. *Serpula Philippi* Mörch, Naturh. Tidsskr., ser. 3, 54, p. 381.
1838. *Serpula fascicularis* Lamarck, Hist. Nat. An. s. Vert., ed. 2, 5, p. 618.
1817. *Serpula contortuplicata* Savigny (*nec* Linné), Syst. Annel., p. 73.
1864. *Serpula Jukesii* Baird, Journ. Linn. Soc., 8, p. 20.
—. *Serpula zelandica* Baird, ibid., p. 21.
1865. *Serpula antarctica* Quatrefages, Hist. Nat. Annel., 2, p. 503.
1884. *Serpula granulosa* Marenzeller, Denks. Akad. Wiss. Wien., p. 19, pl. 4, f. ..
1885. *Serpula vasifera* Haswell, Proc. Linn. Soc. N.S. Wales, 9. p. 688, pl. 31, f. 1, pl. 32, f. 6–8.
1901. *Serpula columbiana* Johnson, Proc. Bost. Soc. Nat. Hist., 19, p. 432, pl. 19, f. 199–204.
1902. *Serpula narconensis* Collin, Semon's Forschungsreise in Austral. u. dem Malayenarchipel. Polychæt., p. 100.

Localities.—British Columbia: Departure bay, 1909–10. W. Spreadborough, collector. A large cluster of tubes.

British Columbia: Savary island beach. May 22, 1914. W. Taylor, collector. A cluster of tubes.

British Columbia: Port Simpson. Beach. Winter, 1914–15. C. M. Barbeau, collector. Parts of two tubes probably this species. On them are

the tubes of *Circeis spirillum*. The tubes of both the *Serpula* and the *Circeis* are in part tinged with green.

A species of circumboreal distribution extending as well in both the Atlantic and Pacific oceans to corresponding southern latitudes, as straits of Magellan, New Zealand, Australia, etc. It is common on the Pacific coast of North America from Alaska to California.

Spirorbis spirorbis (Linné).

1758. *Serpula spirorbis* LINNÉ, Syst. Nat., ed. 10, p. 787.
1800. *Spirorbis borealis* DAUDIN, Recueil, p. 38.
1801. *Spirorbis nautiloides* LAMARCK, Syst. Anim. s. Vert., p. 326.
1863. *Spirorbis borealis* MÖRCH, Naturh. Tidsskr., p. 429.
1897. *Spirorbis (Laeospira) borealis* CAULLERY and MESNIL, Bull. Scientif., p. 211, f. 18, a–c.

LOCALITIES. Northwest Territories: Bernard harbour, outer part. Station 41*f*. August 1, 1915. Depth about 5 meters. Bottom, mud with stones and algæ. One of the tubes is largely derolled, the others of the flat, sinistral spiral form.

Northwest Territories: Young point. Station 50*d*. July 21, 1916. Rock bottom. Two tubes on algæ.

Northwest Territories: Dolphin and Union strait: off Cockburn point. Station 43*a*. Bottom, gray mud with pebbles; no algæ. 100 meters.

Nova Scotia: Halifax. February, 1917. Beach. F. Johansen, collector. Numerous tubes on *Fucus*.

Circeis spirillum (Linne).

1758. *Serpula spirillum* LINNÉ, Syst. Nat., ed. 10, p. 785.
1803. *Serpula lucida* MONTAGU, Test. Brit., p. 507.
1825. *Heterodisca lucida* FLEMG, Edinb. Journ., 15, p. 247.
1863. *Spirorbis spirillum* MÖRCH, Naturh. Tidsskr., ser. 3, 1, p. 438.
1894. *Circeis armoricana* ST. JOSEPH, Ann. Sc. Nat., 17, p. 350, pl. 12, f. 387.
1897. *Spirorbis (Dexiospira) spirillum* CAULLERY and MESNIL, Bull. Sci., p. 198, f. 4, a–b.
1919. *Circeis spirillum* CHAMBERLIN, Mem. Mus. Comp. Zool., 48, p. 478.

LOCALITIES. Northwest Territories: Dolphin and Union strait: west of Cockburn point. Station 43*c*. September 14, 1915. Depth, 50–60 meters. Bottom, sandy mud with stones and algæ. Many tubes with animals *in situ* on *Laminaria* and *Delessaria*.

Alaska: Orca (Cordova). Station 60*a*. September 5, 1916. Tubes on sea-weed. Beach.

Northwest Territories: Bernard harbour, outer part. Station 41*c*. July 28, 1915. Depth, about 10 meters. Bottom, gray mud with *Laminaria*, *Delessaria*, etc. Tubes on *Desmarestia*.

Northwest Territories: Young point. Station 50*d*. July 21, 1916. Depth, 0–1 fathom. Bottom, rock. Two tubes on algæ.

Ungava: Port Burwell. *Neptune* Expedition. A. Halkett, collector. Numerous tubes on sea-weed dredged July 28, 1904.

A common and widespread species in Arctic and temperate regions both in the Atlantic and Pacific. It occurs frequently on kelp (*Laminaria*, etc.), hydroids, etc. The specimens from Station 43*c* on *Laminaria* have the shell in the typical flat dextral spiral form. Those from station 41*c* are some of the same form and a few in part derolled or of the ascending form (*lucidus*-type).

PLATE I.

Fig. 1. *Arctonoe lia*, n. sp. Anterior end, dorsal view.
" 2. *Arctonoe lia*, n. sp. Second parapodium
" 3. *Arctonoe lia*, n. sp. First left elytron.
" 4. *Arctonoe lia*, n. sp. Sixth right elytron (eleventh segment).

1
3
4
2

PLATE II.

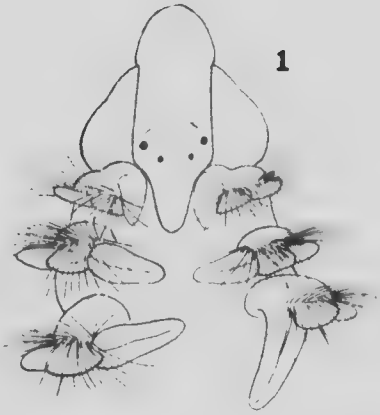
Fig. 1. *Arctonoe lia*, n. sp. Notopodial seta, first parapodium.
" 2. *Arctonoe lia*, n. sp. Neuropodial seta, middle of series, first parapodium.
" 3. *Arctonoe lia*, n. sp. Coarser neuropodial, parapodium from middle region of body, middle of series.
" 4. *Nepthys hudsonica*, n. sp. Anterior region, dorsal view.
" 5. *Nepthys hudsonica*, n. sp. Thirty-third parapodium, anterior view.
" 6. *Nepthys hudsonica*, n. sp. Notocirrus and branchial appendage of the thirty-third parapodium. x

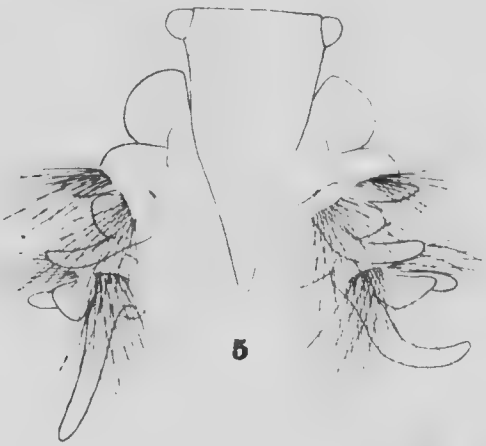
PLATE II.

PLATE III.

Fig. 1. *Spio mimus*, n. sp. Anterior end, dorsal view.
" 2. *Spio mimus*, n. sp. Caudal end, dorsal view.
" 3. *Spio mimus*, n. sp. Thirteenth parapodium, caudal view.
" 4. *Spio mimus*, n. sp. Crochet from twenty-seventh setigerous somite.
" 5. *Scolecolepides arctius*, n. sp. Anterior end, dorsal view.
" 6. *Scolecolepides arctius*, n. sp. Twenty-third parapodium, anterior view.
" 7. *Scolecolepides arctius*, n. sp. Twenty-fourth parapodium from caudal end, anterior view.

PLATE III.





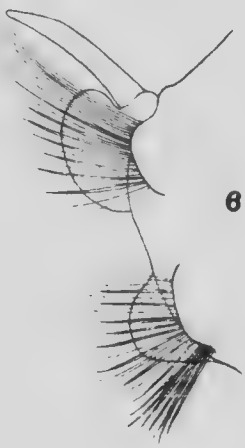
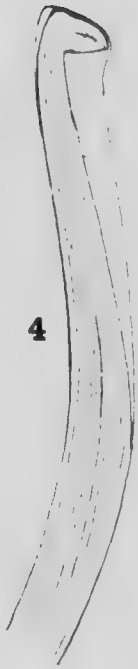
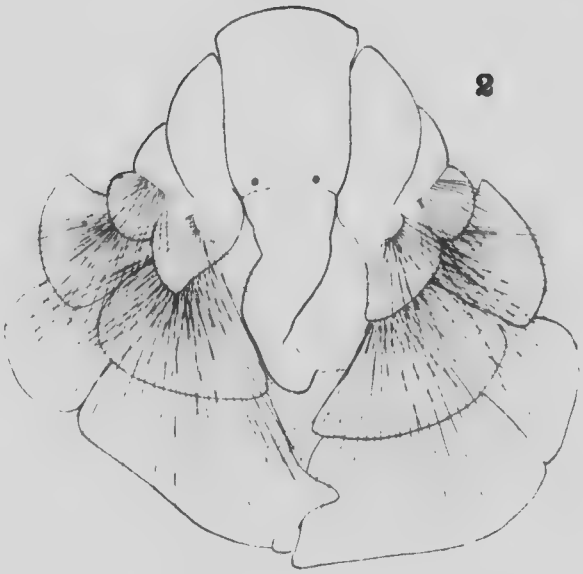


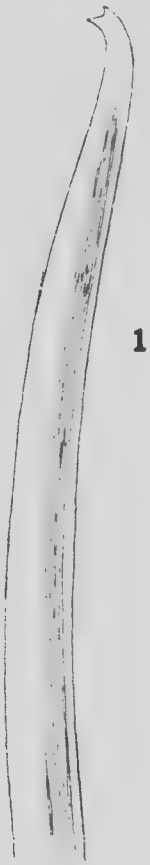
PLATE IV.

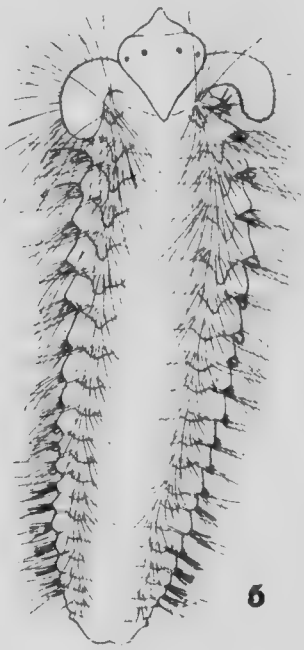
Fig. 1. *Scolecolepides arctius*, n. sp. Crochet from twenty-third parapodium from caudal end.
" 2. *Anaspio boreus*, n. sp. Anterior end, dorsal view.
(Setæ of third parapodia not represented.)
" 3. *Anaspio boreus*, n. sp. Tenth right parapodium, anterior view.
" 4. *Anaspio boreus*, n. sp. Distal portion of crochet from neuropodium of thirty-fifth parapodium.
" 5. Spionid larva A, dorsal view.
" 6. Spionid larva A. Crochet.

PLATE IV.









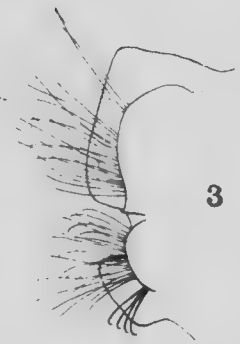


PLATE V.

Fig. 1. *Ampharete johanseni*, n. sp. Palea.
" 2. *Ampharete johanseni*, n. sp. Uncinus.
" 3. *Ampharete reducta*, n. sp. Distal portion of palea.
" 4. *Ampharete reducta*, n. sp Uncinus.
" 5. *Ampharete reducta*, n. sp. Notopodial seta, thirteenth setigerous segment.
" 6. *Ampharete eupalea*, n. sp. Three paleæ from dorsal part of series.
" 7. *Ampharete eupalea*, n. sp. Uncinus.

PLATE V.

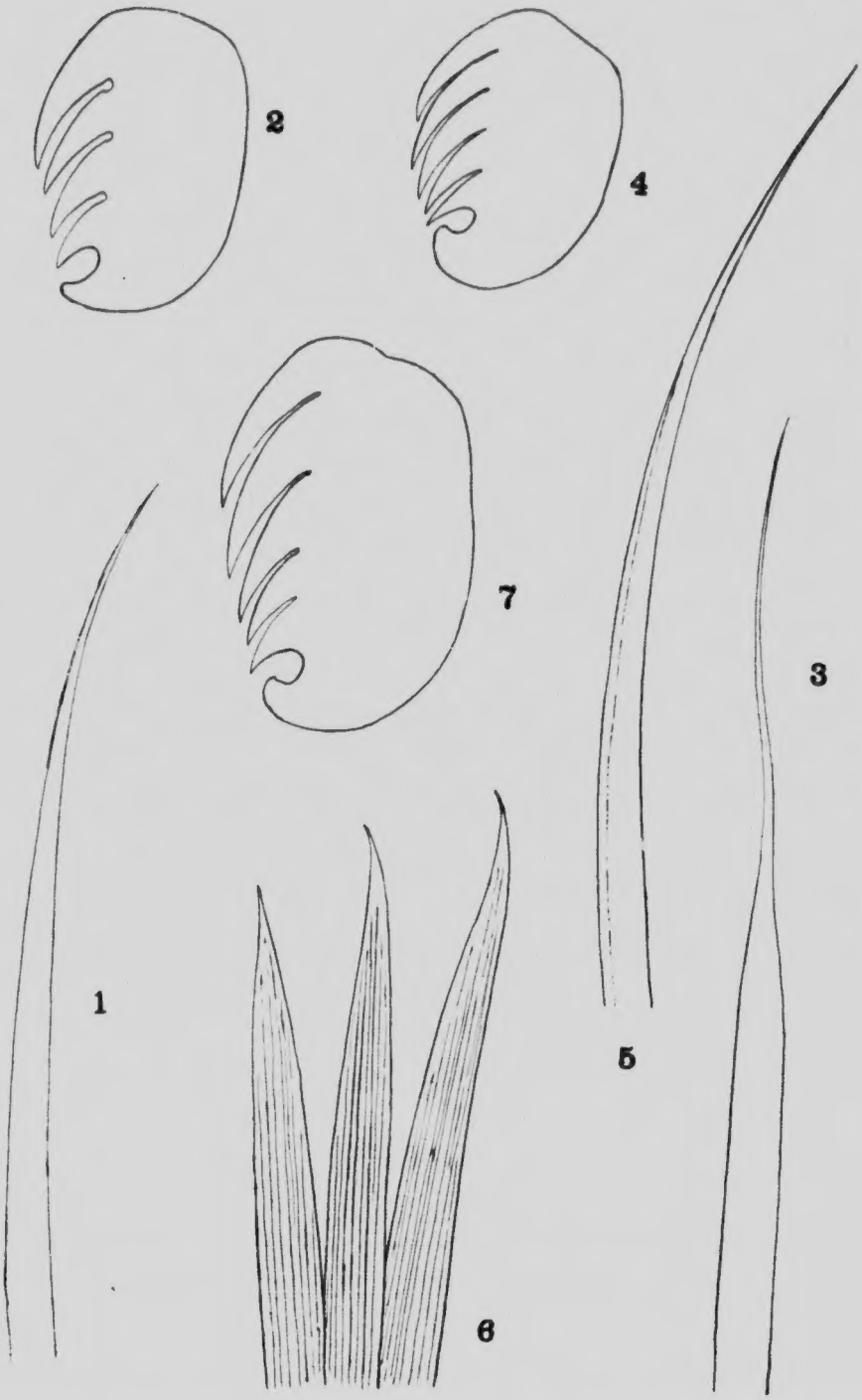
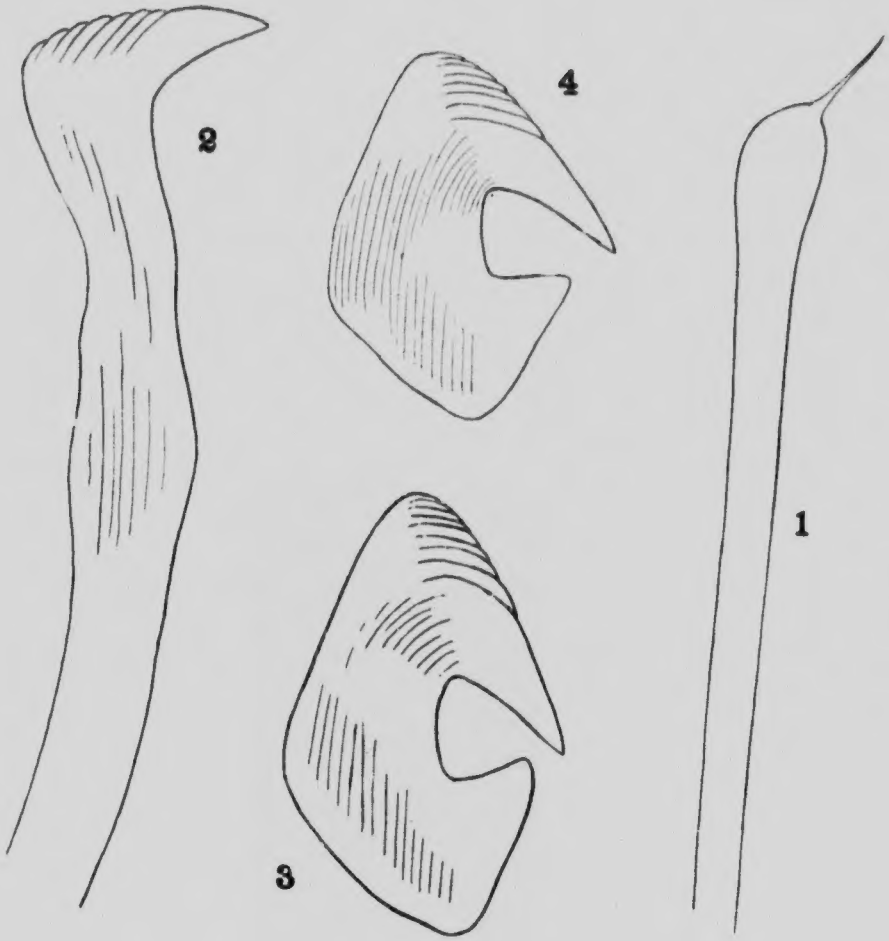


PLATE VI.

Fig. 1. *Chone ungavana*, n. sp. Inferior spatulate thoracic seta from somite V.
" 2. *Chone ungavana*, n. sp. Thoracic uncinus or crochet.
" 3. *Chone ungavana*, n. sp. Abdominal uncinus.
" 4. *Chone ungavana*, n. sp. A second uncinus from same torus nearer end of series.

PLATE VI.



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